

## What is Reptile-Associated Salmonellosis?

Salmonellosis is infection with *Salmonella* bacteria. Most salmonellosis cases come from improperly prepared food, but an increasing number of cases are spread by (are “associated” with) reptiles.

Most reptiles carry *Salmonella* in their intestines and occasionally or continuously shed the bacteria in their feces (“poop”) during their lifetime. The bacteria can then be easily spread to people who touch the reptiles, their cages, or food.

There have also been cases of salmonellosis in people that have not touched reptiles. For example, infants have been infected from bathing in a tub or sink used to clean a reptile’s cage, from crawling on carpeting where a reptile walked, and from drinking from bottles prepared by people who had handled reptiles.

This brochure is intended to provide education; it is not necessarily intended to discourage reptile ownership. Most people (EXCEPT young children or people with reduced immune function) have a low risk of getting salmonellosis from reptiles.

All reptile owners can reduce their chance of illness by following the suggestions in this brochure and the advice from their veterinarian or doctor.

## Symptoms

Salmonellosis in many people is mild and self-limiting (goes away on its own). For others, it can cause mild to severe diarrhea, vomiting, abdominal cramps, and fever (up to 105°F).

*Salmonella* can also cause an even more severe, life-threatening infection that spreads to the bloodstream, bone marrow, or nervous system.

**Those most at risk for severe illness are:**

- **Infants**
- **Children** (younger than 5)
- **Elderly** (over 65 years old)
- **HIV/AIDS patients**
- **Chronically ill** with other illnesses including diabetes and cancer, or on chemotherapy

**Is it just reptiles?** No. Other animals have also been linked to giving *Salmonella* infections to people. These animals include baby chicks, ducklings, goats, cows, rabbits, puppies, and kittens.

It is important for people, especially those at high risk for serious infections, to either avoid animals or take precautions with all animals.

## Can you tell if the animal has *Salmonella*?

No. *Salmonella* bacteria do not usually cause obvious illness in reptiles or other animals.

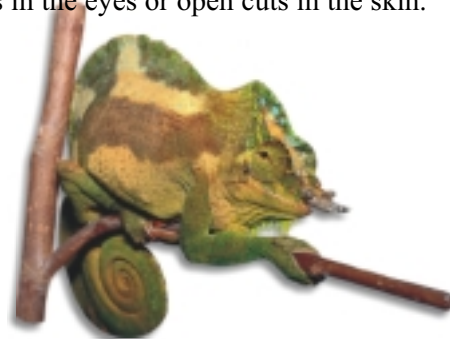
## Can I treat my pet to keep it from spreading *Salmonella*?

No. Unfortunately, using antibiotics on healthy reptiles has not worked to eliminate *Salmonella* from the animals. Using antibiotics may also allow the bacteria to develop resistance to antibiotics. Bacteria that are resistant to antibiotics make it harder for doctors to treat people that are sick.

**How do reptiles get *Salmonella*?** Animals can get infected with *Salmonella* from eating feces; it is normal behavior for many animals to eat the feces of adult animals. Pet food can also be a source of *Salmonella* infection in animals.

## How do reptiles and other animals give *Salmonella* to people?

*Salmonella* bacteria are usually transmitted through the fecal-oral route—(getting animal feces into the mouth). This can happen from touching the animal or something the animal has touched and then touching your mouth or food. Transmission can also occur from getting the feces in the eyes or open cuts in the skin.



**Are there requirements for petting zoos, pet shops, or animal exhibits?** In 1975, the Food and Drug Administration (FDA) prohibited the sale of turtles smaller than 4 inches in diameter (the most popular size bought for children). There are few other public health regulations regarding reptiles in the United States.

Petting zoos and exhibits are generally overseen by the United States Department of Agriculture to ensure the *animal’s* health and safety.

Local, state and federal agencies issue guidelines and recommendations for public health, safety and notification at animal events and pet shops.

## Reptile Recommendations.

**Wash your hands.** Always wash with soap and hot, running water after touching reptiles, cages, food, or cleaning up after the animals.

**Limit access.** Keep your reptile out of the kitchen, dining room, or where food is prepared or eaten.

**Avoid hand to mouth contact.** Do not eat, drink, or smoke while handling reptiles or cleaning cages.

**Limit kissing and cuddling.** *Salmonella* are microscopic. Even if the animal’s skin or mouth looks clean, it isn’t and it may have *Salmonella*.

**Clean carefully.** Buy a plastic basin for cleaning the reptile’s cage and dishes rather than using the kitchen sink or bathroom tub. Cleaning water should be dumped down the toilet—not the kitchen or bathroom sinks. If you must use the bathtub, be sure to clean and sanitize the tub after you clean the cage.

**Keep the pet healthy.** A reptile with a proper diet and clean environment may be less likely to shed *Salmonella*.

**Protect children.** Reptiles should be kept away from homes and childcare centers that have children under the age of 5. All older children should be supervised when handling reptiles and during hand washing after touching reptiles.

## Salmonellosis cases linked to reptiles.

### Turtles.

Ohio, 1994. A 6-week-old boy was hospitalized with diarrhea, stiff neck and fever. His blood and cerebrospinal fluid were positive for *Salmonella*. The family's pet turtle also tested positive for the same type of *Salmonella*. Although the infant did not have contact with the turtle, other house members did touch the turtle and then had contact with the infant. The turtle's food and water bowls were also washed in the kitchen sink.

### Lizards.

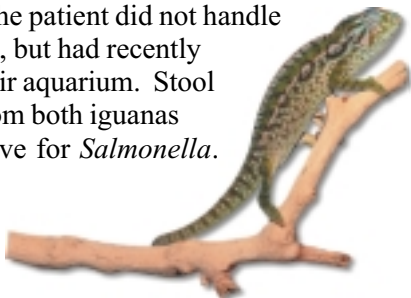
England, 2000. A 3-week-old baby died from an infection of *Salmonella*. The drinking water of the family pet, a water dragon, part of its cage, and the child's mother were all positive for *Salmonella*.

### Snakes.

Kansas, 1997. A 6-year-old boy and his 3-year-old brother developed diarrhea; both were positive for *Salmonella*. The two boys shared a room with two corn snakes that they handled regularly. The two snakes were also positive for *Salmonella*. The parents reported that they were unaware that snakes could be a source of *Salmonella*.

### Iguanas.

Connecticut, 1995. A 40-year-old man was hospitalized with acute lower back pain, chills and fever. His blood tested positive for *Salmonella*. The patient's family had recently purchased two iguanas. The patient did not handle the iguanas, but had recently cleaned their aquarium. Stool samples from both iguanas were positive for *Salmonella*.



## For More Information

### Petting Zoo and Animal Exhibits.

#### Washington State Department of Health

##### Petting Zoo Guidelines—

[www.doh.wa.gov/ehp/ts/Zoo/PettingZooHealthGuide.pdf](http://www.doh.wa.gov/ehp/ts/Zoo/PettingZooHealthGuide.pdf)

##### Reptile Rules (Suggestions for keeping reptiles)—

[www.doh.wa.gov/ehp/ts/Zoo/ReptileRules.html](http://www.doh.wa.gov/ehp/ts/Zoo/ReptileRules.html)

##### Rack Card (hard copies can be obtained from the State and Local Health Departments in Washington)—

[www.doh.wa.gov/here/CRA/PDFs/24\\_ReptilCd\\_E02H.pdf](http://www.doh.wa.gov/here/CRA/PDFs/24_ReptilCd_E02H.pdf)

### **Centers for Disease Control and Prevention** Diseases Related to Pets—

[www.cdc.gov/ncidod/diseases/pets/index.htm](http://www.cdc.gov/ncidod/diseases/pets/index.htm)

### Salmonella Infection.

#### Centers for Disease Control and Prevention

[www.cdc.gov/ncidod/diseases/submenus/sub\\_salmonella.htm](http://www.cdc.gov/ncidod/diseases/submenus/sub_salmonella.htm)

#### Food and Drug Administration

##### Bad Bug Book—*Salmonella*

[www.cfsan.fda.gov/~mow/chap1.html](http://www.cfsan.fda.gov/~mow/chap1.html)

### Animal Associated Salmonellosis Cases.

#### Morbidity and Mortality Weekly Reports (CDC)

Chicks and ducks—[www.cdc.gov/mmwr/preview/mmwrhtml/00016299.htm](http://www.cdc.gov/mmwr/preview/mmwrhtml/00016299.htm)

Reptiles—[www.cdc.gov/epo/mmwr/preview/mmwrhtml/mm4844a1.htm](http://www.cdc.gov/epo/mmwr/preview/mmwrhtml/mm4844a1.htm)

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*Egg Safety 101*  
*Salmonellosis (foodborne)*  
*Handwashing*  
*Zoonotic Illnesses*

# Reptiles & *Salmonella*

zoonotic series

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